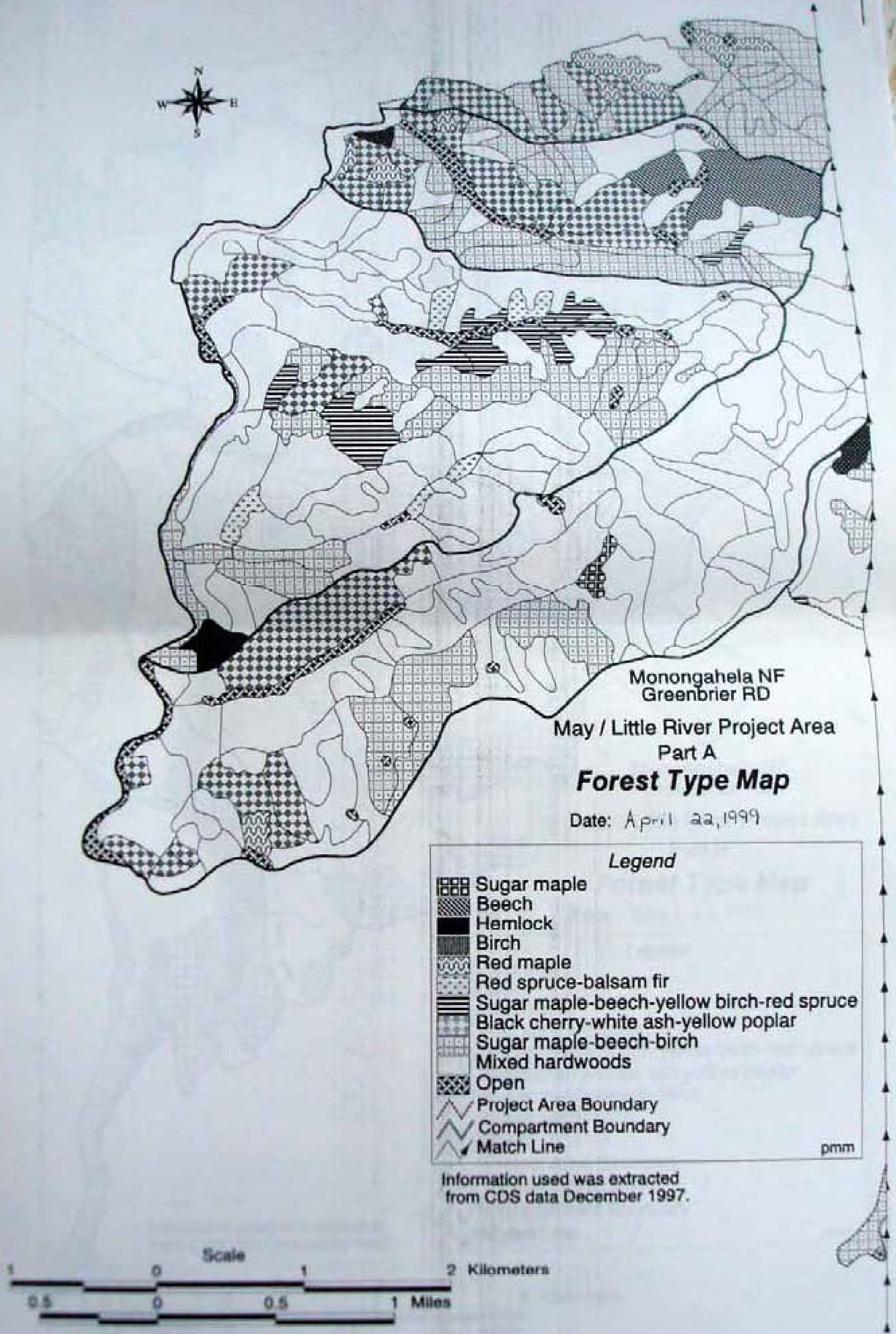
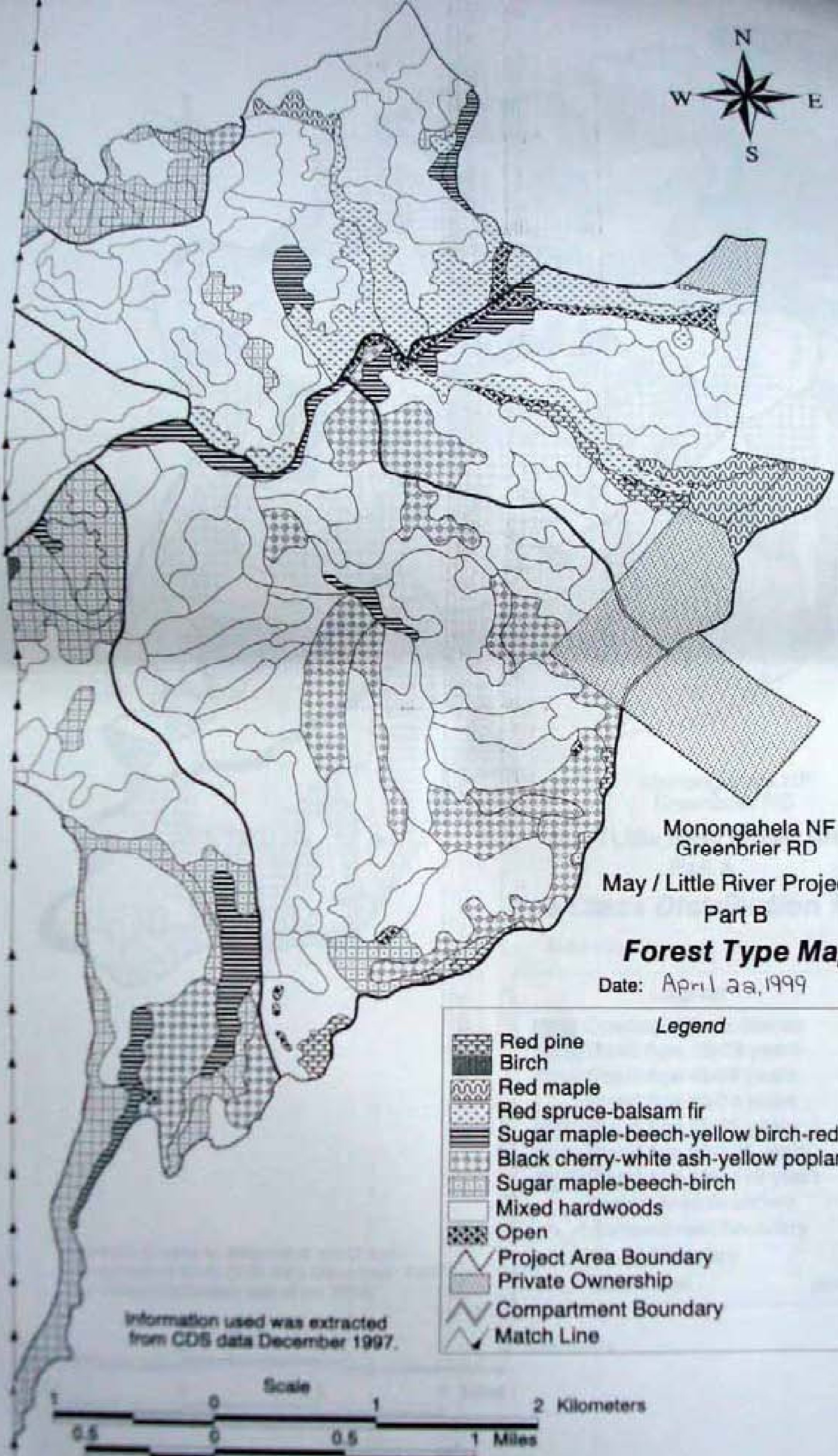

N
W
E
S
Monongahela NF
Greenbrier RD
May / Little River Project Area
Part A
Forest Type Map
Date: April 22, 1999
Legend
Sugar maple
Beech
Hemlock
Birch
Red maple
Red spruce-balsam fir
Sugar maple-beech-yellow birch-red spruce
Black cherry-white ash-yellow poplar
Sugar maple-beech-birch
Mixed hardwoods
Open
Project Area Boundary
Compartment Boundary
Match Line
pmm
Information used was extracted from CDS data December 1997.
Scale
1
0
1
2 Kilometers
0.5
0
0.5
1 Miles



Monongahela NF
Greenbrier RD

May / Little River Project Area
Part B

Forest Type Map

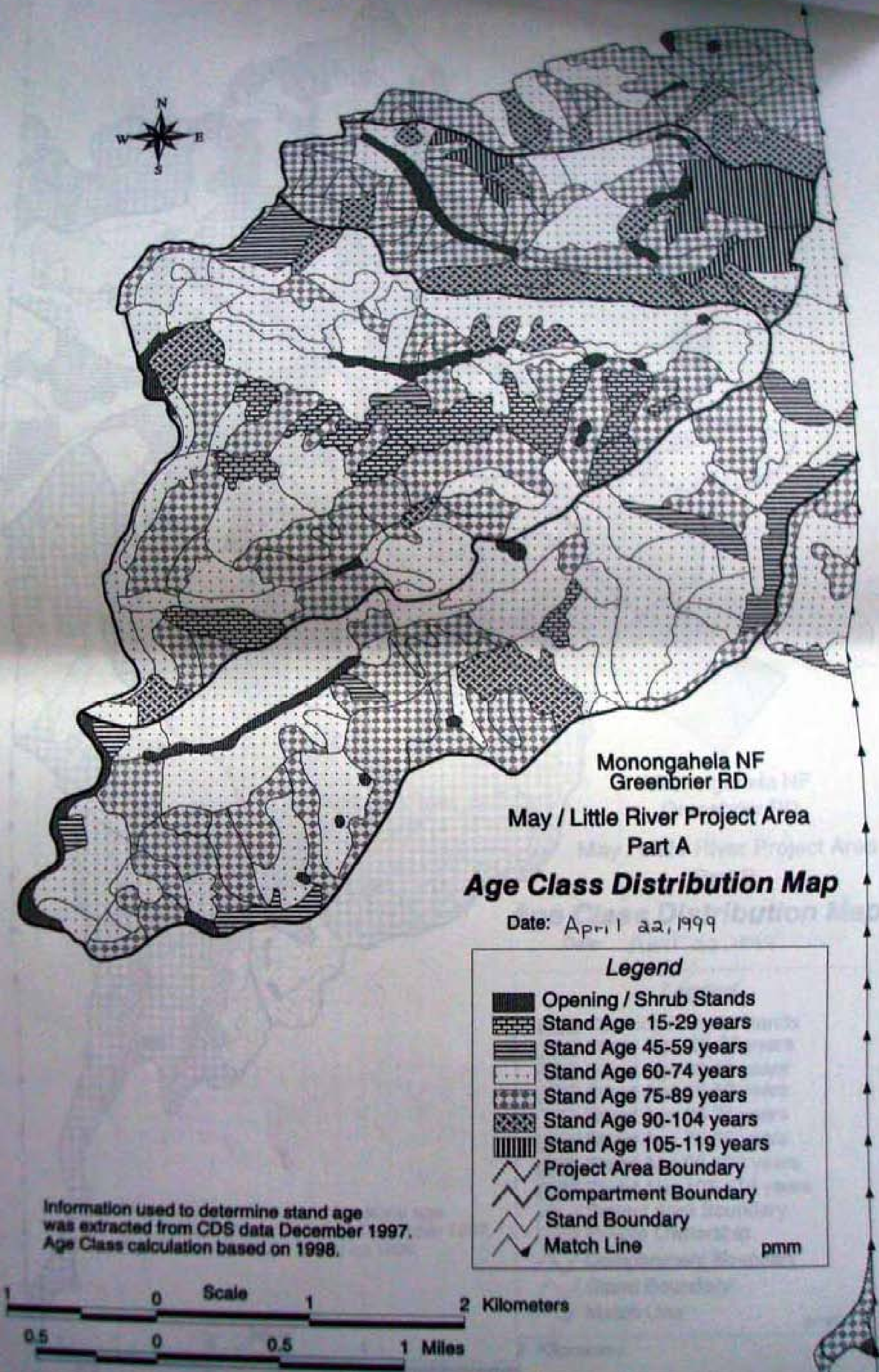
Date: April 22, 1999

Legend

- ▨ Red pine
- ▨ Birch
- ▨ Red maple
- ▨ Red spruce-balsam fir
- ▤ Sugar maple-beech-yellow birch-red spruce
- ▨ Black cherry-white ash-yellow poplar
- ▦ Sugar maple-beech-birch
- ☐ Mixed hardwoods
- ▨ Open
- Project Area Boundary
- ▨ Private Ownership
- Compartment Boundary
- Match Line

pmm

Information used was extracted from CDS data December 1997.



Monongahela NF
Greenbrier RD

May / Little River Project Area
Part A

Age Class Distribution Map

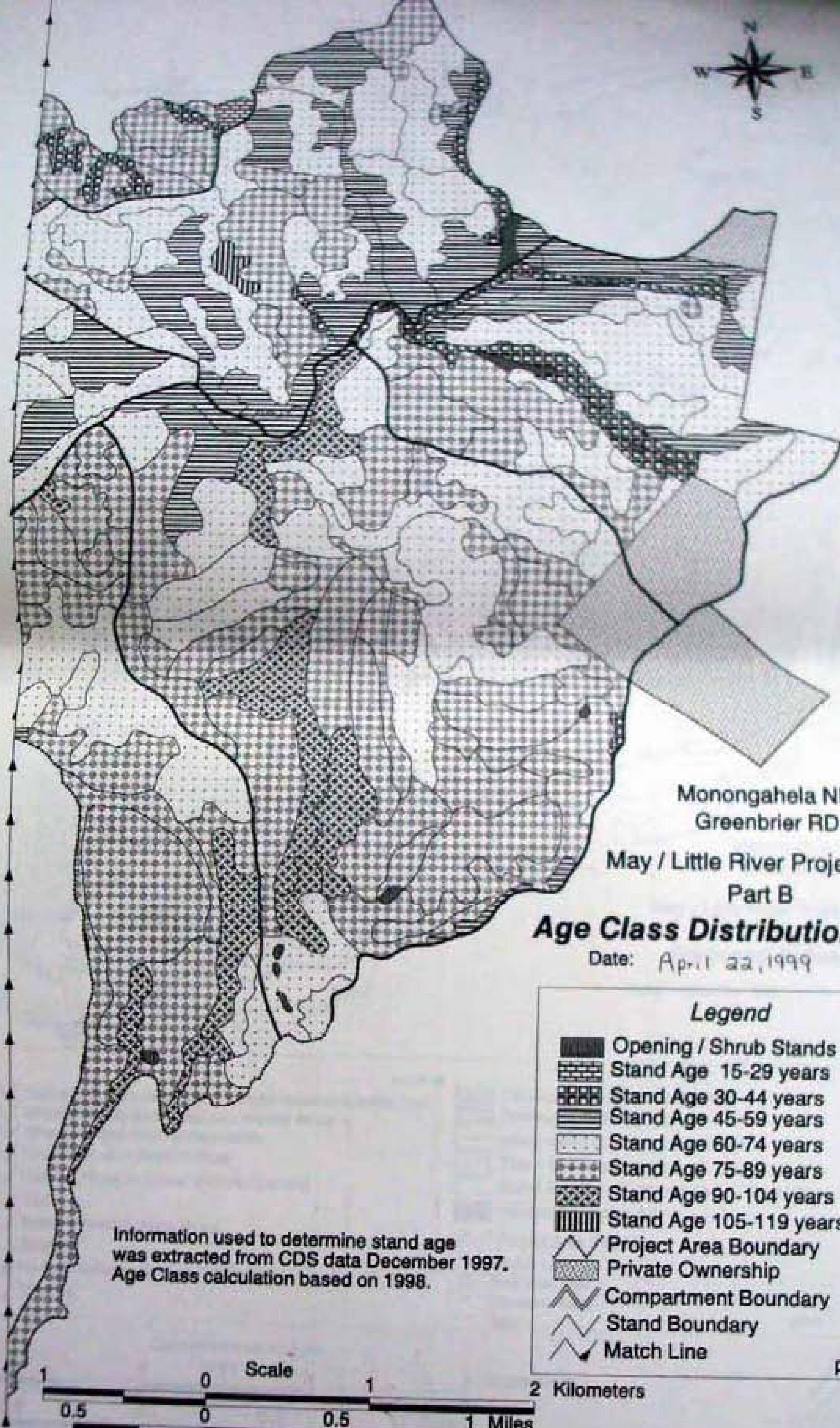
Date: April 22, 1999

Legend

- ■ Opening / Shrub Stands
- ▤ Stand Age 15-29 years
- ☰ Stand Age 45-59 years
- ⬚ Stand Age 60-74 years
- ▦ Stand Age 75-89 years
- ▩ Stand Age 90-104 years
- ▥ Stand Age 105-119 years
- Project Area Boundary
- Compartment Boundary
- Stand Boundary
- Match Line

pmm

Information used to determine stand age was extracted from CDS data December 1997. Age Class calculation based on 1998.



Monongahela NF
Greenbrier RD

May / Little River Project Area
Part B

Age Class Distribution Map

Date: April 22, 1999

Legend

- ■ Opening / Shrub Stands
- ▤ Stand Age 15-29 years
- ▦ Stand Age 30-44 years
- ☰ Stand Age 45-59 years
- ░ Stand Age 60-74 years
- ▒ Stand Age 75-89 years
- ▩ Stand Age 90-104 years
- ▥ Stand Age 105-119 years
- /\/ Project Area Boundary
- ▨ Private Ownership
- /\/ Compartment Boundary
- /\/ Stand Boundary
- /\/ Match Line

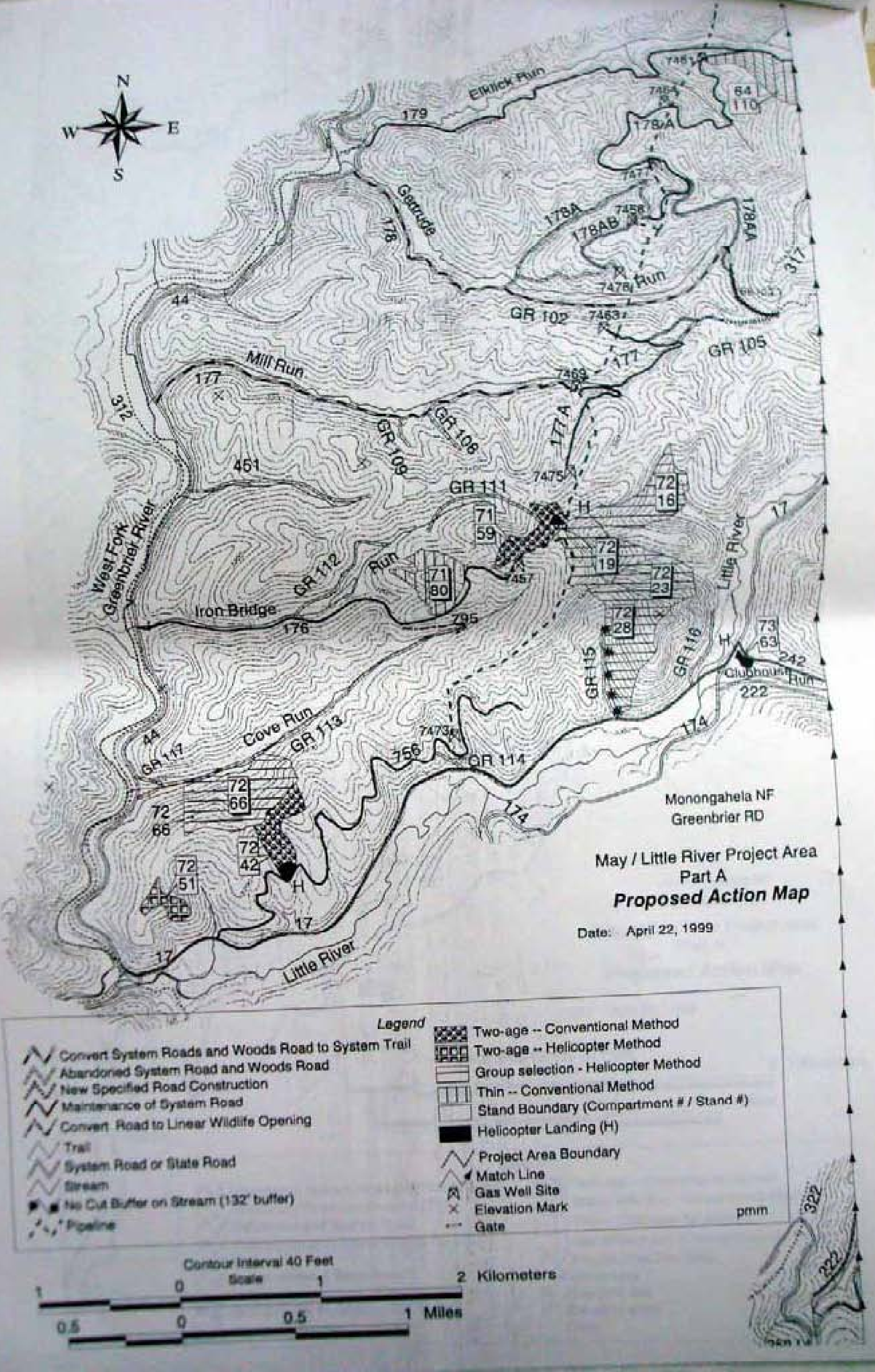
pmm

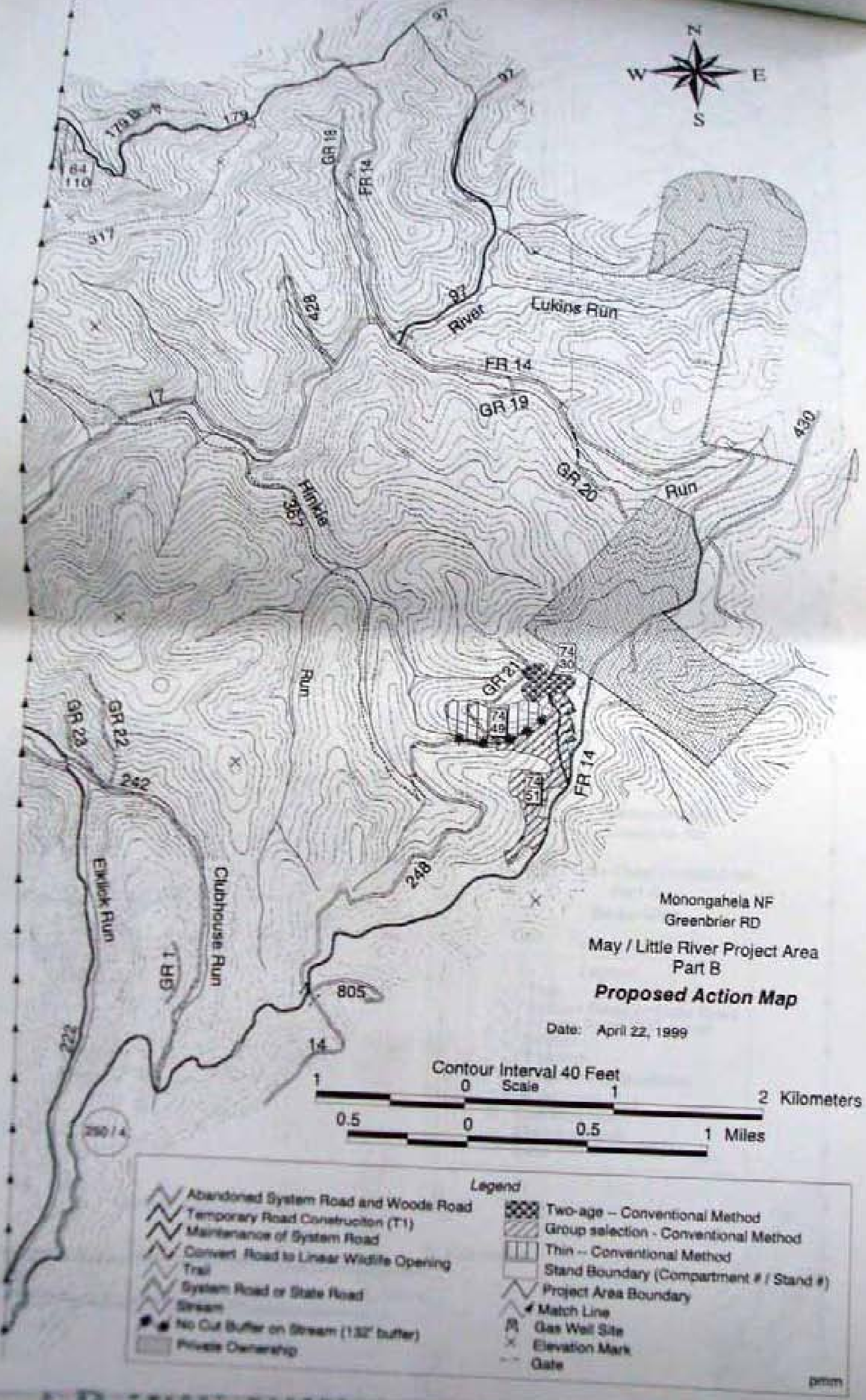
Information used to determine stand age was extracted from CDS data December 1997. Age Class calculation based on 1998.

experience, the final rule is
field. These innovations in
enabled Forest Service unit
credibility.

32. Does the rule require the
Europeans came to Amer
Given climate change, las
conditions of pre-Europe
environments. For this re
from the final rule.

The final rule partially rel
of ecosystems, but does n
settlement. Rather, these
climatic period to estimat
composition and structur
ecological types.





N
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E
S
97
97
179 Bus
179
64
110
GR 18
FR 14
317
428
97
River
Lukins Run
FR 14
17
GR 19
430
GR 20
Run
Hinkle
367
74
30
GR 21
74
49
Run
GR 23
GR 22
242
74
51
FR 14
248
Elklick Run
Clubhouse Run
GR 1
805
14
222
250 / 4
Contour Interval 40 Feet
1
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Scale
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2 Kilometers
0.5
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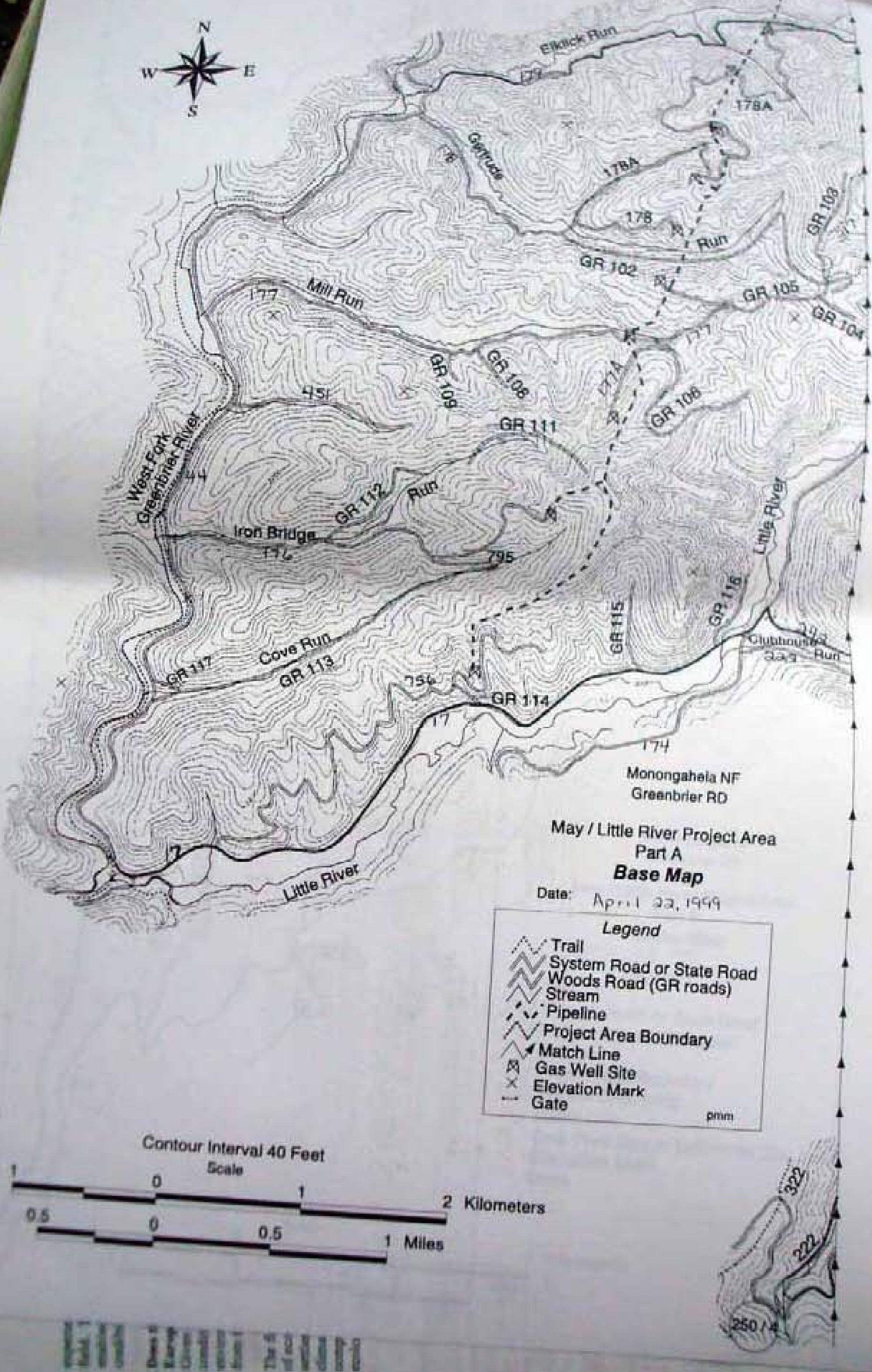
0.5
1 Miles
Legend
Abandoned System Road and Woods Road
Temporary Road Construction (T1)
Maintenance of System Road
Convert Road to Linear Wildlife Opening
Trail
System Road or State Road
Stream
No Cut Buffer on Stream (132' buffer)
Private Ownership
Two-age -- Conventional Method
Group selection - Conventional Method
Thin -- Conventional Method
Stand Boundary (Compartment # / Stand #)
Project Area Boundary
Match Line
Gas Well Site
Elevation Mark
Gate
pmm

Monongahela NF
Greenbrier RD

May / Little River Project Area
Part B

Proposed Action Map

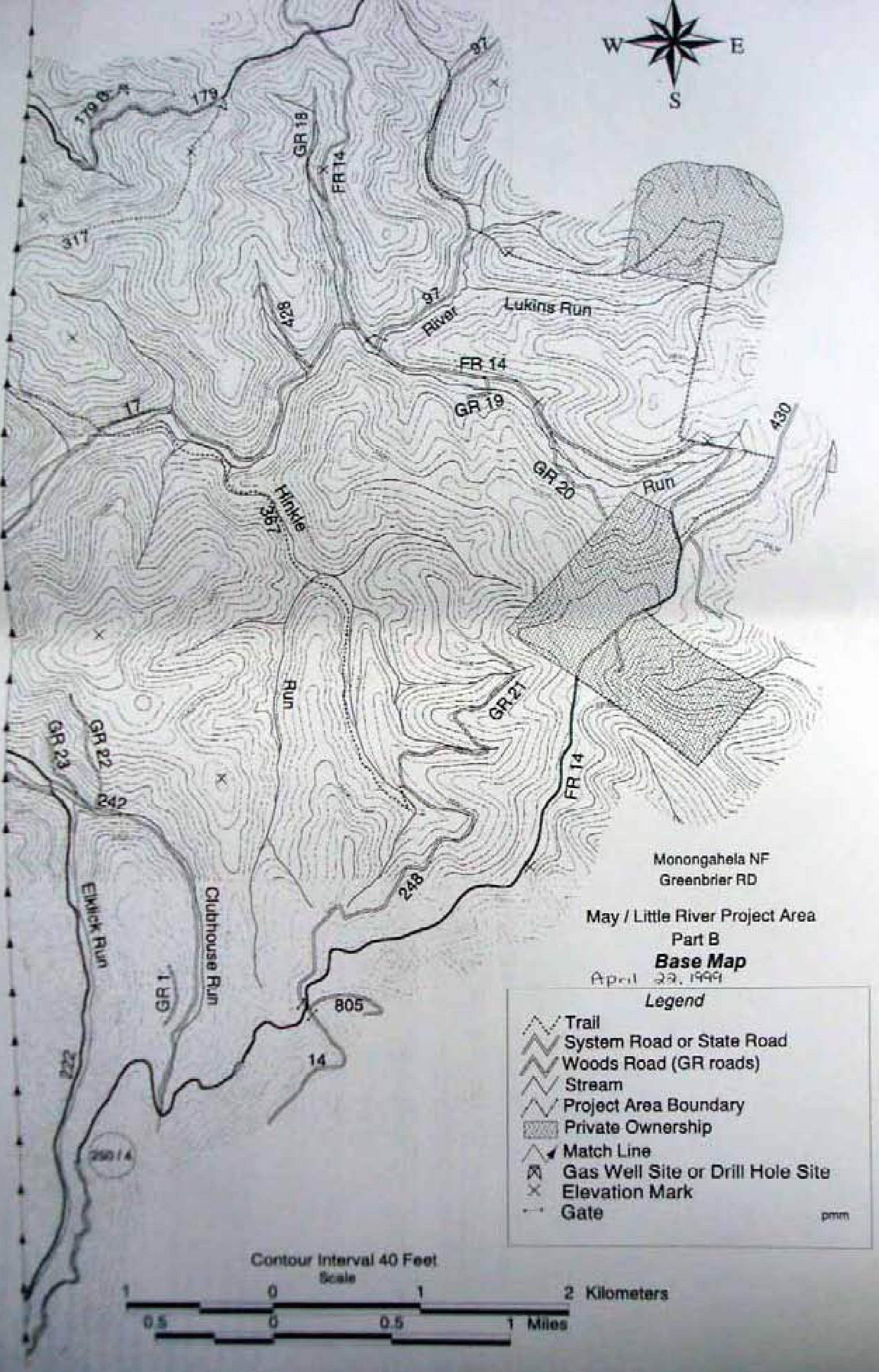
Date: April 22, 1999



Monongahela NF
Greenbrier RD

May / Little River Project Area
Part A
Base Map

Date: April 22, 1999



Monongahela NF
Greenbrier RD

May / Little River Project Area
Part B
Base Map
April 22, 1999

Legend

- Trail
- System Road or State Road
- Woods Road (GR roads)
- Stream
- Project Area Boundary
- ▨ Private Ownership
- Match Line
- Gas Well Site or Drill Hole Site
- × Elevation Mark
- Gate

pmm

WEST VIRGINIA'S SPRUCE FORESTS ARE NOT ENDANGERED!

Recent articles in the Charleston Gazette and the Elkins Inter-Mountain concerning the status of West Virginia's red spruce forests are misleading and need clarification. The articles wrongly attributed the destruction of the original spruce forests solely to logging while it was really the uncontrolled and often deliberately ignited forest fires that destroyed much of these forests. Repeated fires destroyed seed sources and small spruce trees left in the logging operations that would have renewed the spruce forests. Often the thick organic soil was burned down to bedrock. Origins of many wild fires were associated with steam powered logging equipment, but other factors also played a role. For example A. B. Brooks, in the book "Forest and Wood Industries" published in 1911, describes a destructive fire that spread from the campfire of Confederate scouts on the Roaring Plains of Randolph County that later became enlarged by repeated fires to encompass part of four counties along the Allegheny Mountains. Dr. Roy Clarkson in his excellent book "Tumult on the Mountains" points out that after logging, stockmen burned many logged areas in the hopes of converting them to pasture. In 1908 it was estimated that more than 10 percent of the whole state was burned over. Thus, the original acreage of spruce forests was reduced from about 500,000 acres down to present day estimates of less than 50,000 acres.

A review of the history and use of red spruce forests is important to understand how they should be managed today. The range of red spruce extends all the way from the Maritime Provinces of Canada south into New York, eastern Pennsylvania and along the Appalachian Mountains to North Carolina. Although red spruce reaches its best development in the Southern Appalachian region, it has always been restricted to a relatively small area, occurring at higher elevations in the Appalachian Mountains. In West Virginia, spruce forests occur primarily above 3400 feet in elevation. Beginning in the late 1800's, spruce was one of the most sought after timber trees in West Virginia. Its wood was and still is used for construction lumber, paper, and musical instruments. Red spruce supplied the raw material for sawmills and pulp mills at several locations throughout the state. Communities like Davis, Cass, Durbin, and Richwood all owe their origins to red spruce forests. West Virginia's red spruce forests are valued for timber, wildlife, watershed protection, and recreation. They are home to several species of plants commonly associated more with Canada. Spruce forests are important to threatened and endangered animals such as the northern flying squirrel and Cheat Mountain salamander.

It is critical to make the distinction between damage caused by fire as opposed to damage caused by logging. This difference has important management implications today. Recent research in spruce forests by scientists at the Northeastern Forest Experiment Station in West Virginia indicates that annual growth rates in mature spruce forests have stabilized after a period of decline that began in 1960 and lasted for 20-25 years. Reasons for this decline are usually attributed to a combination of acidic deposition and winter injury. This recent research also shows that growth declines of selected crop trees in red spruce plantations established between 1935 and 1942 can be reversed simply by thinning. Growth rates and stocking levels suggest that red spruce forests in West

Virginia are healthy and can be highly productive. State Forester William R. Maxey reports that recent forest inventories indicate that the volume of red spruce on private land has increased 7 percent between 1989-1995.

In addition to continued fire protection, one of the best options for increasing the acreage of red spruce is the prudent use of harvesting methods that encourage spruce seedling regeneration. Another excellent opportunity to expand the spruce forest type occurs where there is established red spruce growing under the canopy of hardwood trees. Removing the hardwoods releases the spruce so it can occupy the area. Red spruce seedlings often become established in dense shade, but need nearly full sunlight for best development once they reach the sapling stage. Where seed sources exist, dense patches of young spruce trees often become established along roads and trails. This trait can be readily observed along US Route 250 between Elkins and Durbin on top of Cheat Mountain. The potential for area expansion of spruce forests is better than in the past since forest fires which were a major factor in the drastic reduction of the original spruce forests are now less of a threat. The fire hazard in natural spruce forests is quite low.

Revision of the Endangered Species Act, referred to as the Endangered Species Recovery Act of 1997, will enable these forests on both public and private land to be actively managed to better protect both the spruce forests and the species that inhabit them. Interior Secretary Bruce Babbitt as well as both Democratic and Republican leadership in the United States Senate support this rewrite of the endangered species legislation. Every effort should be made to protect and carefully manage existing spruce forests; and, when feasible, expand the area in red spruce forests so they can reoccupy their former range. We support the rewrite of ESA, in part, because it provides a variety of incentives to landowners to conserve species and habitat. Simply locking up the remaining spruce forests under the guise of protection fails to recognize the differences in the forest exploitation of the past and the potential benefits of scientifically based forest management of today and beyond.

West Virginia's spruce forests are not endangered, but they are important habitat for endangered species. This is clearly a case where active, responsible forest management is needed to improve and expand that habitat so the listed endangered species can prosper to a level where they are no longer endangered.

Submitted by: Barbara A. Breshock and Arlyn W. Perkey, chair and chair elect of the West Virginia Division of the Society of American Foresters